We claim:

1. A peptide consisting essentially of at least 18 consecutive amino acids of SEQ ID NO:3.

2. The peptide of claim 1, wherein the peptide consists essentially of SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

3. A fusion peptide comprising the peptide of claim 1 covalently linked to a carrier peptide.

4. The peptide of claim 3, wherein the carrier peptide is maltose binding protein, glutathione-S-transferase, or a six consecutive histidine residues.

5. An isolated nucleic acid sequence encoding the peptide of claim 1.

6. The nucleic acid sequence of claim 5, operably linked to a promoter.

7. A vector comprising the nucleic acid sequence of claim 6.

8. An host cell comprising the vector of claim 7.

9. A method for stimulating the proliferation of a hematopoietic cell in a subject exposed to a chemotherapeutic agent or irradiation comprising

contacting the cell with a peptide comprising at least 18 consecutive amino acids of SEQ ID NO:3, thereby stimulating the proliferation of the hematopoietic cell in the subject.

10. The method of claim 9, wherein the hematopoietic cell is a bone marrow cell.

11. The method of claim 9, wherein the hematopoietic cell is a stem cell.

12. The method of claim 9, wherein the hematopoietic cells is a lin^- cell or a $CD34^+$ cell.

13. The method of claim 9, further comprising contacting the cell with a growth factor.

14. The method of claim 13, wherein the growth factor is stem cell factor, IL-3, IL-6, or flt-3.

15. The method of claim 9, wherein the hematopoietic cell is *in vivo*.

16. The method of claim 9, wherein the hematopoietic cell is *in vitro*.

17. The method of claim 9, wherein the peptide comprises SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

18. The method of claim 9, wherein the peptide consists essentially of SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

19. The method of claim 18, wherein the peptide is covalently linked to a carrier peptide.

20. The method of claim 18, wherein the subject is treated with a chemotherapeutic agent, and wherein the chemotherapeutic agent is an agent that cross-links DNA, an antimetabolite that inhibits dihydrofolic acid reductase, an inhibitor of cell cycle progression, or a cell-cycle non-specific interstrand DNA crosslinker.

21. The method of claim 20, wherein the chemotherapeutic agent is mafosfamide, etoposide, cisplatinum, methotrexate, cyclophosphamide, a monoclonal antibody, platinum, etoposide, adriamycin, doxorubicin, biCNU, hydroxiurea, taxol, steroids, fluorouracil, viucristine, interferon-alpha, bleomycin, fludarabin, cytokine or a chemokine.

22. A method for stimulating the growth of a hematopoietic stem cell, comprising

contacting the cell with a peptide comprising at least 18 consecutive amino acids of SEQ ID NO:3 and a growth factor, thereby stimulating the proliferation or survival of the hematopoietic cell.

23. The method of claim 22, wherein the hematopoietic cell is a bone marrow cell or a peripheral blood cell.

24. The method of claim 22, wherein the hematopoietic cell is a stem cell.

25. The method of claim 22, wherein the hematopoietic cells is a lin^- cell or a $CD34^+$ cell.

26. The method of claim 22, wherein the growth factor is stem cell factor, IL-3, IL-6, or flt-3.

27. The method of claim 22, wherein the hematopoietic cell is *in vivo*.

28. The method of claim 22, wherein the hematopoietic cell is *in vitro*.

29. The method of claim 22, wherein the peptide comprises SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

30. The method of claim 20, wherein the peptide consists essentially of SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

31. A method of stimulating the proliferation or survival of a hematopoietic stem cell in a subject, comprising

administering to the subject a therapeutically effective amount of a peptide comprising at least 18 consecutive amino acids of SEQ ID NO:3, thereby stimulating the proliferation or survival of the hematopoietic stem cell.

32. The method of claim 31, wherein the hematopoietic cell is a bone marrow cell.

33. The method of claim 31, wherein the hematopoietic cells is a lin- cell or a CD34+ cell.

34. The method of claim 31, wherein the peptide comprises SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

35. The method of claim 34, wherein the peptide consists essentially of SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

36. The method of claim 31, wherein the peptide is covalently linked to a carrier peptide.

37. The method of claim 36, wherein the carrier peptide is maltose binding protein, glutathione-S-transferase, or a series of six consecutive histidine residues.

38. A method of protecting a bone marrow cell in a subject treated with a chemotherapeutic agent or radiation from toxicity caused by chemotherapy or irradiation, comprising administering to the subject a therapeutically effective amount a peptide comprising at least 18 consecutive amino acids of SEQ ID NO:3, thereby stimulating the protecting the bone marrow cell from the toxicity caused by chemotherapy or irradiation.

39. The method of claim 38, wherein the hematopoietic cell is a bone marrow cell.

40. The method of claim 39, wherein the bone marrow cell is a hematopoietic stem cell.

41. The method of claim 40, wherein the hematopoietic stem cell is a lin^- cell or a $CD34^+$ cell.

42. The method of claim 38, wherein the peptide comprises SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

43. The method of claim 38, wherein the peptide consists essentially of SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6 or SEQ ID NO:7.

44. The method of claim 42, wherein the peptide is covalently linked to a carrier peptide.

45. The method of claim 44, wherein the carrier peptide is maltose binding protein, glutathione-S-transferase, or a series of six consecutive histidine residues.

46. The method of claim 38, wherein the subject is treated with a chemotherapeutic agent, and wherein the chemotherapeutic agent is an agent that cross-links DNA, an antimetabolite that inhibits dihydrofolic acid reductase, an inhibitor of cell cycle progression, or a cell-cycle non-specific interstrand DNA crosslinker

47. The method of claim 46, wherein the chemotherapeutic agent is mafosfamide, etoposide, cisplatinum, methotrexate, cyclophosphamide, a monoclonal antibody, platinum, etoposide, adriamycin, doxorubicin, biCNU, hydroxiurea, taxol, steroids, fluorouracil, viucristine, interferon-alpha, bleomycin, fludarabin, cytokine or a chemokin.

48. A method of protecting a bone marrow cell in a subject treated with a chemotherapeutic agent or radiation from toxicity caused by chemotherapy or irradiation, comprising administering to the subject a therapeutically effective amount of a nucleic acid encoding a peptide comprising at least 18 consecutive amino acids of SEQ ID NO:3, thereby stimulating the protecting the bone marrow cell from the toxicity caused by chemotherapy or irradiation.

49. A method of stimulating hematopoiesis in a subject with a disorder that impairs hematopoiesis, comprising administering to the subject a therapeutically effective amount of a peptide comprising at least 18 consecutive amino acids of SEQ ID NO:3, thereby treating the disorder that impairs hematopoiesis.